ABSTRACT OF THE INVENTION

The invention relates to methods for extending a primer or a pair of primers in low-temperature cycle DNA amplification for cycle sequencing and PCR. In particular, the methods contemplate the combined use of moderately thermostable DNA polymerases in the presence of a low concentration of glycerol or ethylene glycol, or the mixtures thereof, as an agent to reduce the melting temperature of DNA (that is, the temperature at which the double-strands of DNA are denatured). Predistributed reaction mixtures of a high-fidelity and high processivity DNA polymerase stable at room temperature for several weeks in ready-to-use kits are also contemplated by the invention.